

EU and Serbia: Together in fighting air pollution

AIR POLLUTION: WHAT IS THE SITUATION TODAY?

Air pollution is primarily a result of ever-growing technical and technological development, especially of industry and energy. In Europe, more than two-thirds of citizens live in cities constantly exposed to pollution, which often exceeds the limits recommended by laws, but also by institutions such as the World Health Organisation.

The air quality monitoring system in Serbia indicates that concentration of pollutants in the air quite often exceeds the limit values set for air quality. The national monitoring programme is established in compliance with the transposed EU regulations.

HEALTH IMPACTS – WHAT ARE THE CONSEQUENCES OF POLLUTED AIR?

- ✓ Increased **mortality** and morbidity rates, especially to cardiovascular and respiratory illnesses.
- ✓ 4.2 million cases of **premature death** in the world, including 0.5 million people in Europe (2016)¹.
- ✓ Several thousands of people in the Republic of Serbia suffer from premature death due to the exposure to air pollution, as indicated by calculations of international organisations.²
- ✓ **Social inequality and social justice:** vulnerable population, such as children, senior and household members with lower income and limited access to health protection, are more susceptible to adverse effects.
- ✓ **Air pollution cost Serbia 1.68 billion EUR in 2016.**³

MAIN SOURCES OF AIR POLLUTION IN SERBIA

- ✓ **Energy sector** (thermal power plants, power plants, heating plants, residential and individual household heating),
- ✓ **Transport** (obsolete vehicle fleet – average vehicle age in Serbia is 17 years),
- ✓ **Waste disposal sites and industrial activities** (oil refineries, chemical industry, mining and metallurgy, and construction sector).

WHAT CAUSES THE AIR POLLUTION?

When we say the air is polluted, that means that it contains concentrations of solid particles and gases that have harmful effects for human health. We smell that and quite commonly see with naked eye when the air is filled with high concentrations of harmful gases and dust of unpleasant odour with adverse effect.

Air pollutants can be numerous. This in particular refers to particulate matters (PM₁₀ and PM_{2.5}); nitrogen-dioxide (NO₂), ground-level ozone (O₃)⁵, sulphur-dioxide (SO₂) and carbo-monoxide (CO).

At the beginning of the heating season and start of small heating plants and individual combustion plants, as well as due to stable atmospheric conditions, air pollution had greatly increased in several cities in the last months of 2019, and in January 2020. Exceeded daily values for particulate matters PM10 (50µg/m³) in 2019 were recorded in large number of measurement points⁶. Overpolluted air (air of 3rd category) was marked in Belgrade, Niš, Smederevo, Kosjerić, Pančevo, Novi Sad, Užice and Bor⁷ as well as in the cities of Valjevo, Kraljevo, Subotica, Požarevac, Zaječar and municipality Beočin.

The highest daily concentrations of PM₁₀ in 2019 were measured in Zaječar, 515 µg/m³ and Kraljevo 347 µg/m³.

WHAT CAN BE DONE?

- ✓ **Monitor** - through the national air monitoring programme, established in compliance with the transposed EU regulations.
- ✓ **Efficient control** – by National and local administrative bodies.
- ✓ **Involvement** – Representatives of industry, fuel trade and import, public utility services, heating, energy efficiency and construction, transport, social protection and individual households should be involved and respect limits of pollutant emissions.
- ✓ **Energy generation sector** – Use of low-emission fuels and renewable combustion-free power sources; co-generation of heat and power (e.g. through mini-grids and rooftop solar power generation), etc.
- ✓ **Energy sector** – Access to affordable clean energy for heating in households; developing appliances compliant with the latest eco-design requirements.
- ✓ **Industry** - using the best available techniques and promoting innovations.
- ✓ **Transport** – switching to clean modes of power generation; prioritising public transport in urban areas, walking and cycling and interurban rail travel; switching to low-emission vehicles and fuels.

¹ Ambient air pollution: A global assessment of exposure and burden of disease, World Health Organisation, 2016. (<https://www.who.int/phe/publications/air-pollution-global-assessment/en/>)

² Estimates vary depending on the methodology used: WHO estimates can be consulted on https://serbia.un.org/sites/default/files/2019-10/Health-impact-pollution-Serbia_0.pdf while the figures from the European Environmental Agency are accessible on <https://www.eea.europa.eu/publications/air-quality-in-europe-2020-report>

³ Status of air pollutants and GHGs in the Western Balkans, European Commission, 2020. (https://publications.jrc.ec.europa.eu/repository/bitstream/JRC118679/air_qualityghg_western_balkans_online.pdf)

⁴ Particulate matters diameter of which is less than 10, i.e., 2.5 microns

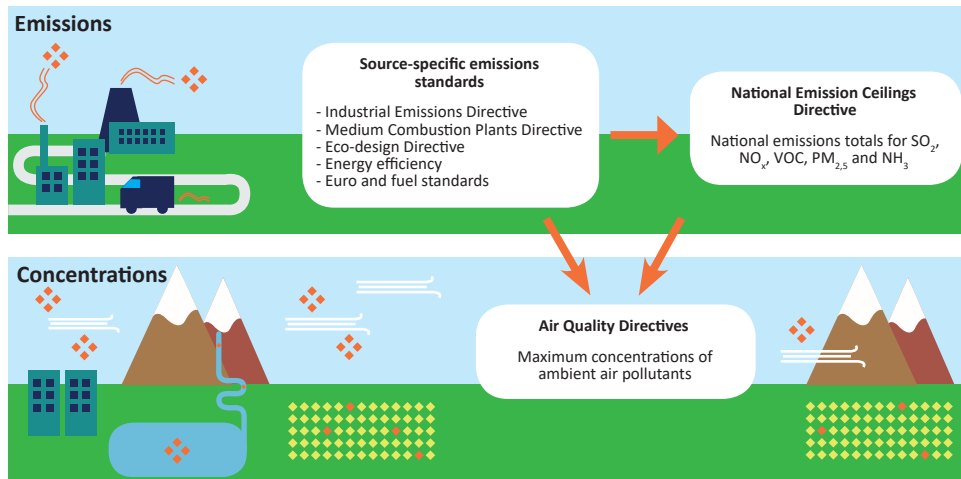
⁵ Secondary pollutant generated in photochemical reaction between the nitrogen oxides (NOx) and volatile organic compounds (VOCs) in presence of sunlight.

⁶ Annual Report of the Republic of Serbia on Air Quality, Environmental Protection Agency, 2019.

⁷ The air was excessively polluted in all listed agglomerations due to high concentrations of PM₁₀ and (or) PM_{2.5}, with the exception of Bor, which was classified into cities in highest pollution category due to excessive concentration of sulphur-dioxide (SO₂).

- ✓ **Urban planning** – Improving the energy efficiency of buildings, such as schools, pre-schools and hospitals.
- ✓ **Municipal and agricultural waste management** – Strategies for waste reduction, separation, recycling and reuse; in case of incineration – application of best available technologies and filters, with strict control of emissions of harmful gases.
- ✓ **Agriculture** – applying best practices to minimise emissions from the use of chemical and organic fertilisers, from cattle and other animals rearing.

WHAT DOES THE EU DO AND HOW?



EU clean air policy – the policy framework

Ambient air quality in Europe is driven by two directives: the Ambient Air Quality Directive 2008/50/EC and Directive 2004/107/EC.

Ambient air quality policies are also linked to legislation on emissions of air pollutants, which regulates the sources.

Note: Sulphur dioxide (SO₂), volatile organic compounds (VOC), particulate matter with a diameter of 2.5 µm or less (PM_{2.5}), nitrogen oxides (NO_x) and ammonia (NH₃) (EEA Report: Healthy environment, healthy lives: how the environment influences health and well-being in Europe, No. 21/2019)

HOW DOES THE EU HELP SERBIA?

The European Union is the largest partner of Serbia in environmental protection. More than EUR 600 million⁸ have been donated or invested over the past 20 years by the European Union and the Republic of Serbia for better environmental protection.

HOW WILL THIS PROJECT CONTRIBUTE?

The First National Strategy for Air Quality, i.e. National Air Protection Programme with the related Action Plan, is under preparation. This programme is based on three pillars:

- reduction of pollutant emissions (Maximal National Emissions – the NEC Directive);
- improvement of air quality (without exceeding the limit values);
- reducing the impact of air pollution on human health.

It is the basis for further development and adoption of regulations in the area of air protection.

The IPA Project “EU for Better Environment” also supports Serbia in developing Directive Specific Implementation Plans on air quality, maximal national emissions, sulphur content, fuel quality and volatile organic compounds in petrol which will guide further implementation of the EU requirements, with the aim of ensuring clean air and healthy environment.

DID YOU KNOW?

- ✓ Inhaling air pollution takes at least 1-2 years of typical human life.
- ✓ The effects of harmful particles can be low, from the feeling of burning eyes and itchy throat, to high ones, such as breathing problems and death.
- ✓ Toxic air pollution is a greater threat for children because of lower physical mass and lung capacity.
- ✓ One bus carries as many passengers as 40 cars.
- ✓ Outdoor air pollution is among the ten most harmful phenomena for human health.
- ✓ People living near the roads are exposed to higher risk of morbidity related to cancer, cardiac and blood vessel diseases, asthma and bronchitis, since these places record higher levels of concentration of air pollutants.
- ✓ During traffic jams, outdoor pollutants can enter your car and pollute the air inside the car up to 10 times more than typical urban air is polluted.

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⁸ The EU has invested EUR 404 million, and Serbia EUR 196 million, detailed information: https://ec.europa.eu/neighbourhood-enlargement/instruments/funding-by-country/serbia_en